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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/046,832

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Yong-Jun Kim

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12/15/2003

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EXAMINER

DONG, DALEI

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,832

Applicant(s)

KIM ET AL.

Examiner

Dalei Dong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☒ Certified copies of the priority documents have been received in Application No. 10/046,832.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 12 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,489,722 to Yoshida in view of U.S. Patent No. 6,498,430 to Sakai.

Regarding to claims 12 and 14-19, Yoshida discloses in Figures 1 and 10, a "PDP 1 has a pair of substrate structures (including cell constructing elements on a substrate) 10, 20, and has a three-electrode surface discharge structure. In each cell of a screen (a display surface) ES, a pair of display electrodes X, Y and an address electrode A cross each other. The display electrodes X, Y are arranged on the inner surface of a glass substrate 11 of a front substrate structure 10. Each of the display electrodes X, Y has a transparent conductive film 41 that forms a surface discharge gap for each cell and a metal film (a bus conductor) 42 that is overlaid on the middle of the conductive film 41 in the column direction. The metal film 42 is drawn out of the screen ES, so as to connect with a drive circuit. The display electrodes X, Y are covered with a dielectric layer 17 having the thickness of approximately 30-50 .mu.m, and the dielectric layer 17 is coated with a magnesia (MgO) as a protection film 18" (column 4, line 16-31).

Yoshida also discloses in Figure 1, “the address electrodes A are arranged on the inner surface of a glass substrate 21 of a back substrate structure 20, and are covered with a dielectric layer 24. On the dielectric layer 24, partitions 29 having the height of approximately 150 .mu.m for defining a discharge gas space 31 of two cells in accordance with the present invention. The partition 29 includes a portion for dividing the discharge gas space to columns (hereinafter, referred to as a vertical portion) 291 and a portion for dividing the discharge gas space at an appropriate position in the column direction (hereinafter, referred to as a horizontal portion) 292. Three colors of fluorescent layers 28R, 28G and 28B for color display are arranged to as to cover the inner surface of the back side including the surface of the dielectric layer covering the address electrode A and the side face of the partition 29. The fluorescent layers 28R, 28G and 28B are excited locally by ultraviolet rays emitted by a discharge gas and emit light. Italic characters (R, G and B) in FIG. 1 indicate light emission colors of the fluorescent materials” (column 4, line 32-50).

Yoshida further discloses in Figure 10, “the display electrode Yg includes a transparent conductive film 41g having a tooth-like pattern extending over the entire length of the row and a linear banding metal film 42. The transparent conductive film 41g includes a linear banding base portion 401 and protruding portions 405, 406, 407 defining the discharge portion in each column. Each of the protruding portions 405, 406, 407 is patterned so as to cope from the base portion 401 in T-shape. However, differently from the example of FIG. 6, the areas of protruding portions 405, 406, 407 are optimized in accordance with the light emission color of the corresponding column, so that the

white balance of the color display can be optimized. In the illustrated example, the width W_r of the protruding portion 405 in the column whose light emission color is red, the width W_g of the protruding portion 406 in the column whose light emission color is green, and the width W_b of the protruding portion 407 in the column whose light emission color is blue have the relationship of $W_r < W_g < W_b$ " (column 7, line 28-46).

However, Yoshida does not disclose the areas of the respective discharge cells are determined by width of the partition walls surrounding each discharge cell. Sakai teaches in Figures 1 and 2, "in the plasma display device of the present invention, spaces of the light emitting cells 5 are made to have different sizes according to luminance of the fluorescent substance 4. Namely, space of a light emitting cell 5 having fluorescent substance of lower luminance is made larger" (column 3, line 57-61).

Sakai also teaches in Figures 1 and 2, "according to the present invention, the light emitting cells are set so that a product of the cube of the size of opening of the light emitting cell of one of primary colors multiplied by luminance of light of the color emitted by the fluorescent substance is substantially equal to that of any other primary color. Preferably, ratio of the opening sizes of cells of different primary colors falls within a range from 0.9 to 1.1 times the $1/3$ powers of the ratio of the values of luminance produced by the fluorescent substances of the respective colors. Luminance is determined separately for each of the three kinds of fluorescent substances 4, for R, G and B colors. Luminance of the color of each fluorescent substance may actually be measured using the panel of the plasma display device to be practically used, except for the size of the identical light emitting cells, then obtaining luminance of each single light

from the panel which is prepared by applying a fluorescent substance of one color to all light emitting cells in the panel” (column 3, line 62 to column 4, line 12).

Sakai further discloses in Figures 1 and 2, “for the size of the light emitting cell opening of each primary color, ratio of the widths of the openings is changed. For this purpose, ratio of the partition wall pitch and/or ratio of thickness are set for the light emitting cell of each primary color” (column 4, line 13-18).

Sakai further yet teaches in Figures 1 and 2, “The first method is to change the thickness A, B and C of the partition walls 2 which form the light emitting cells 5 with pitches P1, P2 and P3 of the cells 5 of different colors being identical. Thus widths D1, D2 and D3 of the light emitting cells, and consequently the opening areas, are changed” (column 4, line 40-45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have change the thickness of the partition walls of Sakai for the plasma display panel of Yoshida in order to mitigate the deviation in the luminance of each light emitting cells.

Regarding to claim 20, Yoshida discloses the claimed invention except for the specific area ratio of different transparent electrodes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have adjust the area ratio of different transparent electrodes in accordance with the design specification, since it has been held that where the general conditions of a claim are disclosed in the prior art,

discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

3. Applicant's arguments filed October 21, 2003 have been fully considered but they are not persuasive.

In response to Applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Yoshida reference and Sakai reference both teaches ways to improve a plasma display. Further Sakai reference teaches the adjusting of the discharge space in accordance to the luminescence intensity of each color. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have adjust the discharge space of Yoshida in according to the teaching of Sakai in order to for the light emitting cells are set so that a product of the cube of the size of opening of the light emitting cell of one of primary colors multiplied by luminance of light of the color emitted by the fluorescent substance is substantially equal to that of any other primary color.

Also, in response to Applicant's argument that Yoshida reference in view of Sakai reference does not teach or suggest the main partition walls are uniform width and only the auxiliary partition walls vary in width. Examiner asserts that Applicant mistakenly interprets that the Sakai reference *must* varying widths of the partition walls in each of the two directions, Sakai reference merely teaches the varying width of the partition wall *only* in one of the direction and does not teaches the width of the partition wall must be varied in both directions. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have adjust the discharge space of Yoshida in according to the teaching of Sakai in order to for the light emitting cells are set so that a product of the cube of the size of opening of the light emitting cell of one of primary colors multiplied by luminance of light of the color emitted by the fluorescent substance is substantially equal to that of any other primary color.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

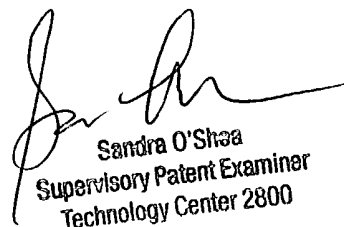
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870 (after January 14, (571)272-2370). The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939 (after January 14, (571)272-2378). The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.

December 9, 2003



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800